

OCEAN GALES AND STORMS JULY, 1926

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barometer	Gale ended	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Highest force of wind and direction	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN													
Cameronia, Br. S. S.	Glasgow	New York	51 49 N.	38 42 W.	6th	8 p., 6th	7th	Inches 29.05	E	S., 8	NW	NW., 8	SE.-NE.-NW.
Dront, Br. S. S.	Hamburg	do	46 22 N.	32 51 W.	10th	2 a., 11th	11th	29.65	SW	SW., —	NNW	—, 8	SW.-W.-NNW.
Marja Petrinovic, Jug. Slav. S. S.	Norfolk	Europe	39 45 N.	53 59 W.	11th	1 p., 11th	11th	29.85	SW	SW., 8	SW	SW., 8	Steady.
Mayaro, Br. S. S.	Grenada	New York	17 22 N.	63 56 W.	23d	1 a., 23d	23d	29.66	ENE	ENE., 11	ESE	SE., 12	ENE.-E.-ESE.
Tegucigalpa, Hond. S. S.	Baracoa	do	24 30 N.	73 24 W.	24th	3 p., 25th	25th	29.72	ENE	ENE., 10	E	E., 12	ENE.-E.
United States, Dan. S. S.	Oslo	do	58 32 N.	3 40 E.	25th	9 a., 25th	25th	29.27	S	NNW., 6	NNW	NNW., 8	S.-NW.
William Campion, Am. S. S.	Colon	Philadelphia	23 40 N.	70 00 W.	24th	Noon, 25th	26th	29.52	NE	E., 12	SE	E., 12	NE.-E.-SE.
Bogota, Am. S. S.	New York	West Indies	25 00 N.	74 12 W.	25th	2 a., 26th	26th	29.79	E	E., 10	SE	E., 10	SE.-E.
Ariano, Br. S. S.	London	Montreal	53 25 N.	42 10 W.	26th	4 p., 26th	27th	29.52	WSW	WSW., 7	SSW	WSW., 8	Steady.
Sun, Am. S. S.	Off Miami	do	25 18 N.	80 05 W.	26th	4 p., 27th	27th	29.57	NNE	WNW., —	WSW	—, 10	NNE.-NW.-W.
Gulfking, Am. S. S.	Philadelphia	Port Arthur	29 10 N.	80 24 W.	27th	Noon, 27th	28th	29.91	ENE	ENE., 6	S	NE., 12	E.-SE.
Orizaba, Am. S. S.	New York	Habana	28 25 N.	79 35 W.	26th	Noon, 27th	28th	29.00	E	NE., 12	SE	NE., 12	N.-NE.
Gulftrade, Am. S. S.	Bayonne	Port Arthur	28 20 N.	78 49 W.	27th	7 p., 27th	28th	29.60	E	E., 10	S	ENE., 11	E.-ESE.
E. R. Kemp, Am. S. S.	Portsmouth	Houston	31 43 N.	31 43 W.	28th	3 a., 28th	29th	29.95	SSE	SSE., —	S	—, 8	SE.-S.
Endicott, Am. S. S.	Galveston	Havre	45 32 N.	23 38 W.	30th	10 p., 30th	31st	29.92	SSW	—, 7	WSW	S., 8	S.-WSW.
Pres. Roosevelt, Am. S. S.	Bremerhaven	New York	50 08 N.	21 10 W.	31st	2 p., 31st	31st	29.87	S	S., 5	W	N., 8	S.-SW.
NORTH PACIFIC OCEAN													
Coalinga, Am. S. S.	Iquique	Los Angeles	17 10 N.	104 00 W.	5th	8 p., 8th	9th	28.90	W	SE., 12	SE	SE., 12	Steady.
F. J. Luckenbach, Am. S. S.	San Pedro	New York	18 00 N.	103 38 W.	7th	6 p., 7th	8th	29.00	E	SE., 4	SE	ENE., 9	Steady.
Mayebashi Maru, Jap. S. S.	Balboa	Los Angeles	17 36 N.	102 59 W.	8th	9 p., 8th	9th	29.73	ESE	E., —	SE	E., 8	E.-ESE.
Pacific Shipper, Br. S. S.	San Pedro	Panama	18 35 N.	104 22 W.	8th	8 p., 8th	9th	29.67	S	ENE., 9	ESE	ENE., 9	Steady.
Montana, Fr. S. S.	do	Balboa	19 20 N.	105 32 W.	8th	8 a., 9th	9th	29.80	SE	E., 8	SE	E., 8	Steady.
Montgomery City, Am. S. S.	Portland, Oreg.	Baltimore	19 12 N.	105 45 W.	9th	9 a., —	9th	29.77	SE	ESE., 7	ESE	E., 8	E.-ESE.
William Campion, Am. S. S.	Grays Harbor	Balboa	20 13 N.	106 40 W.	8th	4 p., 8th	10th	29.63	W	SE., 8	SE	SE., 8	S.-SE.
Toco, Br. S. S.	San Pedro	Tecopilla	19 10 N.	107 10 W.	9th	3 p., 9th	10th	29.52	E	E., 8	SE	E., 8	Steady.
Harold Dollar, Br. S. S.	San Francisco	Kobe	34 35 N.	139 30 E.	13th	7 p., 14th	14th	29.28	NE	—	NW	NE., 9	Steady.
Weirbank, Br. S. S.	Chemulpo	Shanghai	37 10 N.	126 20 E.	15th	8 a., 15th	16th	29.68	S	S., 8	SSW	S., 10	Steady.
Oak Park, Am. S. S.	Honolulu	Balboa	19 15 N.	127 52 W.	18th	1 a., 19th	19th	29.50	N	N., 8	SE	N., 8	N.-S.-SE.
Grace Dollar, Am. S. S.	Karatsu	San Francisco	48 30 N.	163 47 E.	20th	8 p., 20th	22d	29.93	SSW	SSW., 6	S	SSW., 8	S.-SSW.
Africa Maru, Jap. S. S.	Victoria	Yokohama	52 29 N.	164 16 W.	21st	4 p., 21st	22d	29.68	WNW	WNW., 8	WNW	WNW., 8	Steady.
Do	do	do	50 04 N.	175 00 E.	25th	8 a., —	25th	29.68	W	SW., 8	SW	SW., 8	S.-SW.
Pres. Taft, Am. S. S.	Honolulu	do	34 49 N.	154 30 E.	26th	2 p., 26th	27th	29.29	SE	SSW., 3	SW	SE., 8	Steady.
SOUTH PACIFIC OCEAN													
Canad. Britisher, Br. S. S.	Port Kembla	Panama	34 50 S.	168 00 W.	10th	Midt, 11th	11th	29.32	ENE	NNE 9	NNE	ENE., 10	2 points.

551.506 (265.2)
NORTH PACIFIC OCEAN

By WILLIS EDWIN HURD

The Aleutian Low in June had almost disappeared, except for a great shallow trough over the northern waters of the ocean. At this season the Low is somewhat vestigial and usually recedes toward the western part of Bering Sea. Recession is also normal to July, but in July, 1926, unusual pressure conditions prevailed in this region. The average barometer at Kodiak was 29.78 inches, 0.18 inch below the normal. At Juneau it was also much below, while at St. Paul, in the eastern Bering Sea, it was almost as decidedly above. Hence a pronounced and abnormal Low appeared central over the northwestern part of the Gulf of Alaska.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level at indicated hours, North Pacific Ocean, July, 1926

Station	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Dutch Harbor ¹	29.97	-0.05	30.26	10th	29.54	2d.
St. Paul ¹	29.98	+ .13	30.28	19th	29.52	25th.
Kodiak ¹	29.78	- .18	30.16	15th	29.20	3d.
Midway Island ¹	30.10	+ .02	30.22	5th	29.04	16th.
Honolulu ²	30.10	- .01	30.10	29th	28.88	22d.
Juneau	29.91	- .14	30.15	20th	29.49	24th.
Tatoosh Island ²	30.06	- .01	30.29	31st	29.80	9th.
San Francisco ³	29.91	- .04	30.06	12th	29.65	8th.
San Diego ³	29.89	.00	30.02	29th	29.72	9th.

¹ P. m. observations only.² A. m. and p. m. observations.³ Corrected to 24-hour mean.⁴ Thirty days.⁵ And on other dates.

The east Pacific anticyclone was permanent throughout the month. Early in July it was central near the American coast, but after the first few days it spread westward and thereafter occupied an enormous area in middle latitudes, being central somewhat east of the 180th meridian.

At Honolulu after the slight break of June in the long drouth the dry conditions returned. The total July rainfall amounted to only 0.36 inch, which was 0.83 inch below the normal. The trades blew 95 per cent of the time, prevailing from the east, highest velocity 28 miles from the east on the 20th. The temperatures also continued high, and the month was the warmest July since 1900.

Dry weather continued along the American coast south of Vancouver. San Francisco at the end of the month reported the 85th successive day without appreciable rainfall, while Eureka experienced the driest spring and summer on record. Temperatures continued abnormally high. At Juneau, owing to the favorable location of the Aleutian Low, precipitation occurred frequently.

Very little rough weather occurred over the main body of the ocean, and such gales as were experienced by vessels in mid-sea at various times were only of moderate force.

In the tropics, however, the weather was more disturbed. An account of the typhoons of the Far East during the month is appended.

In the American tropics a small cyclone was encountered on the 21st, near 19° N., 131° W., by the American steamer *Oak Park*. The lowest pressure observed by the vessel was 29.49 inches, highest wind-force, 8. Nothing further is known of the movements of the cyclone.

A full-fledged hurricane raged up the Mexican west coast from the 5th until the 9th. It probably originated near 10° N., 97° W., moved northwestward, and was last heard from near 19° N., 110° W. Several vessels met this storm, but most of them encountered moderate gales and depressions only. Two steamers, the British *M. S. Reginolite*, Capt. F. A. Germain, master and observer, from San Pedro to Balboa, and the American tank steamer *Coalinga*, Capt. N. E. Larson, Mr. S. Lindholm, second officer, Iquique to Los Angeles, experienced heavier winds and seas, and the *Coalinga* battled for hours in a full hurricane, lowest observed pressure 28.90 inches, at 8 p. m. of the 8th, near 17° N., 104° W. This vessel met with strong westerly winds as early as the 3d, when in 6° 26' N., 94° 33' W. These continued during the 5th, increasing at times to force 7. On the 6th, in 13° 42' N., 102° 07' W., the wind-force rose to 10, the direction changing from SW. and NW. to NE., and barometer down to 29.56. On the 7th the storm became more violent, the winds at times rising to force 12, with blinding rain. From then until 8 a. m. of the 9th hurricane winds predominated. Quoting from the observer:

Due to numerous changes in the direction and force of the wind, the storm appeared to be of a somewhat freaky nature. We judged it to be moving in a NW. direction at a lower speed than the ship. We had apparently reached the center of the storm on the evening of July 8, when the ship was hove to on an SE. course. The *Coalinga* was in ballast and in good trim, and sustained no serious damage, except to bridge, lifeboats, and gear. It may be of interest to note that during two days before the storm reached its greatest force a number of sea birds in exhausted condition took shelter on board the ship.

The following is quoted from the report of Captain Germain, of the *Reginolite*:

The storm broke at 10 a. m., July 8, the ship then being in lat. 18° 35' N., long. 104° 20' W., and continued with increasing violence until midnight, gradually decreasing during the morning of the 9th and dying away at noon.

During the forenoon of the 8th weather reports were exchanged between all vessels in radio communication, and from the information thus secured, the center of the storm was roughly estimated, at noon, to be located in lat. 16° 30' N., long. 104° W., and to be traveling in a WNW'y direction. This position is only approximate, however, as barometric readings could be obtained only on one side of the disturbance. It would be interesting to know how this estimate compares with the actual position.

It will be noted that no meteorological information was exchanged between ships until the storm had actually broken. If the ships concerned had done this earlier, much more general information might have been available.

It would be to the general advantage of all vessels trading on eastern Pacific Ocean routes, if daily exchanges of weather reports could be instituted. Valuable information of probable weather changes would be at the mariners' disposal, and warnings of approaching cyclonic disturbances would be available in sufficient time for definite steps to be taken to avoid the storm center.

Along the western two-thirds of the northern steamer routes fog was frequent, particularly south of the westernmost part of the Aleutian chain, where it occurred on about 60 per cent of the days. Between west longitudes 130° and 150° the phenomenon was little observed, but along the American coast from Vancouver to San Diego it was reported as occurring frequently. On the 22d and 23d fog was observed in a somewhat out-of-the-

way place for its occurrence, namely, in 19° N., 125° to 130° W.

TYPHOONS AND DEPRESSIONS

FOUR TYPHOONS IN THE PHILIPPINES IN JULY, 1926

By Rev. JOSÉ CORONAS, S. J.

[Weather Bureau, Manila, P. I.]

There were four typhoons in the Philippines during the last month of July, one having passed between Luzon and the Visayas, another across northern Luzon, and the other two across the Balintang Channel.

The first one was an intense but very small typhoon, with a radius of no more than 30 miles. It entered Samar during the night of the 3d to the 4th; traversed Masbate in the morning of the same day, and Romblon in the afternoon. It caused considerable damage but only in a very limited number of towns near the center. The lowest barometric reading recorded in our stations was that of Calbayog 746.03 mm. (29.37 inches) at 6 a. m. of July 4.

The second typhoon was shown by our weather maps on July 13 over the Pacific about 200 miles to the east of Samar. It moved first NW. by W., and then WNW. while crossing northern Luzon in the evening and night of the 15th. Although it was a well developed typhoon while passing northeast of Catanduanes on the 14th, it traversed Luzon in the form of only a shallow depression of little importance. It caused considerable damage in the provinces of southeastern Luzon by heavy rains and consequent floods. The depression or typhoon inclined to the north in the China Sea passing practically over Pratas in the morning of the 17th. From Pratas to the China coast it moved almost to the north.

On the 19th, when the center was already over China north of Hongkong, a disastrous electric and rain storm took place in the English colony, almost unprecedented in the history of south China. It was reported by the United Press that 20 inches of rain had fallen in seven hours, many buildings having been wrecked and several lives lost.

The third typhoon was probably formed on the 17th to 18th over the Pacific 500 or 600 miles east of northern Luzon. It seems to have moved almost due west until the afternoon of the 19th when the center was about 200 miles east of northern Luzon. Then it moved NNW., but only for less than one day. After 10 a. m. of the 20th the typhoon took a WNW. direction and traversed the Balintang Channel about half way between Aparri and Basco during the night of the 19th to 20th. The center passed close to the south of Hongkong in the morning of the 22d.

The barometric minima recorded in Aparri and Basco were 747.87 mm. (29.44 inches) and 747.97 mm. (29.45 inches), respectively.

The last typhoon of the month was so small that it hardly influenced the weather of the Philippines, except in the Batanes Islands and the northernmost part of Luzon. It was probably formed about 150 miles east of northern Luzon on the 29th, and took a NW. and NNW. direction passing through the eastern part of Balintang Channel in the morning of the 30th and very close to the Batanes Islands at about 6 or 7 p. m. of the same day. The center was over Formosa in the afternoon of 31st. The lowest barometric minimum recorded in Basco, Batanes Islands, was 750.76 mm. (29.56 inches).